

## DETAILED ACTION

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Louis P. Herzberg, applicant's representative, on November 07, 2008.

The application has been amended as follows:

#### **In the claims:**

**Claims 2-4, 6-13, 19-20 have been canceled.**

**Claims 1, 5, 18 have been amended as follows:**

1. (Currently amended) An extensible-markup-language Path Language (XPath) evaluating method comprising evaluating the XPath relevant to an extensible-markup-language (XML) document by use of a computer, said step of evaluating being carried out individually concerning inputted XML events, while subjecting the XML document to streaming processing, the step of evaluating XPath comprising:

a first step of serially inputting XML event strings constituting an XML document to be processed;

a second step of serially evaluating the XPath respectively relevant to the inputted XML events while subjecting the XML document to streaming

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processing and retaining information concerning a result of partial evaluation of the XPath in given storing means when the XPath is partially established with respect to a given XML event;

a third step of repeating the partial evaluation of the XPath along with the input of the XML event strings while considering the result of the partial evaluation retained in the storing means and evaluating that the XPath is established with respect to the XML document when the last part of the XPath is established; and

judging establishment of the entire XPath while accumulating results of said partial evaluation enabling evaluation of the XPath by use of said streaming processing-

wherein the second step includes the steps of:  
generating an automaton for expressing the XPath to be evaluated; and  
evaluating the XPath partially by allowing transition of a state of the automaton based on inputted respective XML events and retaining a result of the partial evaluation as the state of the automaton;

wherein the second step includes the steps of:  
generating a first stack which expresses the XPath to be evaluated with a string of stack elements; and

generating a second stack for analyzing a nested structure of the XML document to be processed based on respective inputted XML events and then evaluating the XPath partially by comparing the first stack with the second stack;  
and

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wherein the second step includes the steps of:  
serially constructing a document tree indicating a document structure of  
the XML document to be processed based on input of respective XML events;  
and

evaluating the XPath along with construction of the document tree by use  
of the document tree including a part which has been constructed.

5. (Currently amended) An XPath evaluating apparatus comprising:

an evaluation executing unit being embodied in a program storage device  
and executed by a processor, readable by machine, tangibly embodying a  
program of instructions tangible computer readable medium, and employed for  
inputting XML event strings constituting an XML document and serially evaluating  
the XPath with respect to each of XML events while subjecting the XML  
document to streaming processing, said serially evaluating being carried out  
individually concerning inputted XML events, while subjecting the XML document  
to streaming processing, and while retaining information concerning a result of  
partial evaluation of the XPath when the XPath is partially established with  
respect to a given XML event, and evaluating that the XPath is established with  
respect to the XML document when the last step of the XPath is established;

an XML event transferring unit being embodied in a program storage  
device and executed by a processor, readable by machine, tangibly embodying a  
program of instructions tangible computer readable medium, and employed for  
inputting the XML event strings constituting the XML document to be processed

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and serially transferring the XML event strings to the evaluation executing unit;

and

a judging unit judging establishment of the entire XPath while accumulating results of said partial evaluation enabling evaluation of the XPath by use of said streaming processing-

an automaton generating unit being embodied in a program storage device and executed by a processor, readable by machine, tangibly embodying a program of instructions tangible computer readable medium, and employed for generating an automaton which expresses the XPath to be evaluated, wherein the evaluation executing unit performs partial evaluation of the XPath by allowing a state of the automaton generated by the automaton generating unit to perform transition based on the XML events transferred from the XML event transferring unit, and retains a result of the partial evaluation as the state of the automaton;

a stack generating unit being embodied in a program storage device and executed by a processor, readable by machine, tangibly embodying a program of instructions tangible computer readable medium, and employed for generating a first stack which expresses the XPath to be evaluated with a string of stack elements,

wherein the evaluation executing unit performs partial evaluation of the XPath by generating a second stack for analyzing a nested structure of the XML document subject to processing based on the XML events transferred from the

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XML event transferring unit and then comparing the first stack generated by the stack generating unit with the second stack.

18. (Currently amended) A computer program product comprising a program storage device and executed by a processor, readable by machine, tangibly embodying a program of instructions the program of instructions for causing a computer to effect the Xpath evaluating apparatus of claim 5.

***Allowable Subject Matter***

2. Claims 1, 5, 14-18 are allowed (Re-numbered as 1-7).

3. The following is an examiner's statement of reasons for allowance:

Prior art of record do not teach the combination of claimed elements including: "a first step of serially inputting XML event strings constituting an XML document to be processed;

"a second step of serially evaluating the XPath respectively relevant to the inputted XML events while subjecting the XML document to streaming processing"; "wherein the second step includes the step of: generating an automaton for expressing the XPath to be evaluated"; "analyzing a nest structure of the XML document to be process" as recited in independent claim 1, similarly for independent claim 5.

Thus, prior art of record neither renders obvious nor anticipates the combination of claimed elements in light of the specification. Dependent claims 14-18 are allowed at least by virtue of their dependencies from their pertinent independent claims. After a further search and a thorough examination of the

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present application and in light of the prior art made of record, claims 1, 5, 14-18 are allowed.

***Conclusion***

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THU-NGUYET LE whose telephone number is (571)270-1093. The examiner can normally be reached on 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on 571-272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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September 18, 2008  
/Thu-Nguyet Le/  
Examiner, Art Unit 2162

/John Breene/

Supervisory Patent Examiner, Art Unit 2162